# Course Name: Quantitative Analysis

Semester or Year-Long          Endorsement Requirement:  Level 3, 4
Grade Level:  11, 12          Prerequisite:  Geometry

**Course Description:**

*The goals of quantitative analysis are:*
- *Problem solving with practical, authentic application problems.*
- *Analyses, interpretation, and questioning of results*
- *In-depth understanding of mathematical concepts of beginning algebra and geometry to gain an appreciation of mathematics.*

*Students will work as teams on major projects to:*
- *Determine the reasonableness of results.*
- *Interpret results.*
- *Use critical thinking skills to analyze results.*
- *Organize and present information graphically, numerically, symbolically, and verbally.*

*Students will continue to develop their abilities to:*
- *Calculate percents and proportions.*
- *Perform unit conversions.*
- *Solve equations.*
- *Use formulas.*
- *Use calculators.*

**Course Outline:**

*Teachers will design their own courses by choosing from the following topics and applications:*

Weights and measures
- Health sciences
- Pharmacology
- Environmental sciences

Patterning and number theory
- Bar codes
- Zip codes
- Banking numbers

Geometric design
- Architecture
- Art
- Construction
- Consumer products
- Topography
- Geo-caching

Descriptive statistics
- Elections
- Politics
- Marketing
- Sports
- Health sciences

Probability
- Gaming
- Contests

Linear programming
- Optimization of profit or resources
- Mixture problems

Networking and logic
- Computer
- Internet search engines

Growth and decay
- Population
- Environmental sciences
- Health sciences

**Teacher Resources:**

- Jacobs, Harold. *Mathematics: A Human Endeavor*. W. H. Freeman, 1994. (ISBN: 978-0716724261).

- Bennett, Jeffrey, and William Briggs. *Using and Understanding Mathematics: A Quantitative Reasoning Approach*. Addison Wesley, 2007. (ISBN: 978-0321458209).

- Pierce, Don, Leon Roland, and Ed Wright. *Mathematics for Life: A Foundation Course for Quantitative Literacy*. Prentice Hall, 1997. (ISBN: 978-0134938592).

- COMAP. *For All Practical Purposes: Mathematical Literacy in Today's World*. W. H. Freeman, 2005. (ISBN: 978-0716759652).

- Any elementary algebra or geometry text book rich in story problems, explorations, and projects

- Authentic data from newspapers, magazines, research data, consumer products, and the Internet

For a more complete bibliography, see http://www.statlit.org/QL3.htm.